

UNITED STATES PATENT APPLICATION

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TITLE

Grip Strength Enhancement Glove

AKA

"HERCULES' HAND"

No cross-reference

No Federal Sponsor, ETC.

No Sequence Listing, ETC.

Foreign Application Data – Not Applicable

SPECIFICATIONS

BACKGROUND OF INVENTION

(0001) The present invention relates most specifically to an exercising mechanism utilized by the hand and/or digits of said hand in order to increase gripping and/or holding capacity and/or strength from what was the "norm" of individual to a strata higher than that stated norm. Some of these "field" devices are separate instruments unto themselves to be utilized by the hand(s). That is to say, form made grippers (V-shaped designs) or pulley devices (such as lobes or ball or sphere designs), there are stretch and pull and spring-chain devices, pliable, soft putty-like coagulations, and individual finger-pull-and-push spring-load contraptions of varying sorts. Other, more modern designs relate to the shape of the hand itself. Examples would be, those clamped directly on a hand or over a glove of a user, with cup-like-devices fitted upon the ends of the fingers. They are held by wire or rubber band mechanisms, which provide resistance while the hand is moved into a fist configuration and back out to an open hand position. The hand exerciser increases the strength, coordination and gripping ability of the hand and digits of a user as well as providing physical therapy for treating conditions such as arthritis, carpal tunnel syndrome, weak muscles and joints and post surgical weakness.

(0002) The most common deficiency of many of the known devices is in the inability to exercise the full range of motion for each joint. The majority does not provide for the separate exercise of the major joint classifications but use one simple motion for exercising the entire hand and digits. Furthermore, most of these devices provide an inappropriate and/or uneven distribution of resistance to the various joints. The facts of the matter are that the functional capabilities and strength of the index finger greatly exceeds that of the little or smallest finger and therefore resistance should be applied to all fingers based on their size and strength capacity rather than evenly across the board. This simply is not the case in multiple manifestations of these/this "field" apparatus. However, there have been attempts to overcome this dilemma with some success, albeit comparatively crude.

(0003) Of all "field" devices of which we are aware to date, none entails the utilitarian benefit advantages of our currently presented inventive manifestation, the **Grip Strength Enhancement Glove AKA "Hercules' Hand"**. Two of the more modern innovations are as follows: U.S. Patent # 6,059,604 (Villepigue) and U.S. Patent # 6,454,681 (Brassil, et. al). The first is, in fact, an apparatus for exercising a hand of a user. The exerciser comprises a kind of "down-the-middle" covering to the hand (removable) and secured at the wrist of the user and extending over a backside of the hand. A finger power attachable/releasable, meshes/connects with a "dorsal-like" wrap and extends over at least one finger of the hand of the user providing a resistance to movement of the at least one finger. Basically, there are finger and thumb power bands, which move independently of each other allowing exercise of any individual area and/or combination area of the complete hand structure. The bands tension is held in place by cup-like devices that fit over the finger/thumb tips. This seems to be an innovative instrument of standard utilitarian strata. We are not aware as to why it is not being more widely utilized. In fact, we were not aware of its existence at all until investigating for our own apparatus purposes.

(0004) The second example (Brassil, et. al.), entails an exercise and therapy hand device composed of a glove for inserting the hand. This glove encompasses a palm section, one or more finger sections for receiving a finger, a back section, and a compressible material that is connected to the palm section. Basically, the compressible substance exercises the muscles of the hand that control the closing of the hand, while the one or more elastic member sections exercise the muscles of the hand that control the opening of the hand. Again, this *is* a utilitarian design in our estimation. It is certainly a workable concept. Although, again, we have no personal knowledge of medical or industrial usage, it may, in fact, have a niche clientele in areas unknown to us. Neither design falls into similar philosophy, physicality or benefit advantage relating to the innovative neoteric utilization heretofore, unparalleled via **"Hercules' Hand"**.

BRIEF SUMMARY OF THE INVENTION

(0005) The present invention relates specifically to a hand exercising device that the hand is put *into*; that is to say, as a glove. It is not worn directly *on* a hand, as in "attached to", as an apparatus. The device is *not* worn *over* a glove of a user providing resistance, as is/are the latest of all such said "field" devices at their maximal and at their most current. This innovative

presentation *is* the glove itself. The "**Hercules' Hand**" fits readily onto and over the users hand(s). This allows the flexibility of either the entire hand or any individual digit in a natural movement through a full range of motion thereby exercising the hand and digits in the most successful, utilitarian method for full potential of strength improvement humanly possible. The **glove itself** consists of multiple pressure/muscle resistant "mostly metal, i.e., aluminum and/or PVC-like" material "**stays**" integrated within the fabric of said glove at strategically placed locations. Only an innovation, the innovation that is "**the glove**" can guarantee this full complete natural movement. In conjunction, the shape formulation with the hand itself allows for the most safe, highly effective method and condition for faster results than any other such "field" products known to man without exception. The hand-exerciser increases the strength, coordination, and gripping ability for the hand and digits of a user as well as treating a multiplicity of conditions which could/would be improved by physical therapy.

(0006) A primary purpose of the present invention is to provide a hand exerciser that will overcome the shortcomings of all prior art mechanisms. This innovation is the **Grip Strength Enhancement Glove AKA "Hercules' Hand"**. The "**Hercules' Hand**" is the four-fingered-thumbed-to-the-wrist (and covering the wrist) apparatus itself. It/they fit and look fairly similar to any other kind of regular glove(s) used for any number of "glove-purposes". A synopsis description relates and pertains most closely to that of an actual and normal glove worn on the human hand for a purpose ranging from protection of hands to protection of that being touched by the hand. Others uses may be warmth of the hand to accentuation of grip to improvement of aesthetics. Fabric can/will be multi-material and design can/will be multi-schematic and/or prepositional. Several different glove types will be made available for both sports and therapeutic purposes.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

(0007) FIGURE 1 – Is showing the palm side of a hand. Finger, thumb, and palm metal-stay placement locations are indicated by line-arrows. Spring-stays are also easily discernable due to drawings on each individual finger, the thumb, U-shaped stay between index finger and thumb

and palm. These locales are approximately where the “stays” would be situated when glove is on hand.

(0008) FIGURE 2 – Is full view of top or backside of “**Hercules’ Hand**” Glove. Indications are given as to placement of flexible spring-like resistant metal-stays encasements sheathed within strong corrugated and/or corrugated-like material of “Glove”. These indications are identified via writings and drawings/diagrams. This particular model of (**HH**) glove does not come with individual knuckle “stays” whereas other models do have such “stays” This drawing does indicate this case.

(0009) FIGURE 3 – Is a full view of top or backside of “Hercules’ Hand” Glove. Indications are given as to placement of thin spring-metal blade-like “stay” encasements sheathed within the glove material. They are configured and sized as to correlate with appropriate finger and strength necessary to engender strength required to manipulate each “stay” in accordance with each finger/thumb placement. This model (**HH**) does have individual “knuckle stays” The placement writing near wrist area is only a rough draft “logo” possibility – not really pertinent.

(0010) FIGURE 4 – Shows inside/palm side of “Glove” with indication of finger/thumb placement for flexible spring-metal sheathed blade-like “stays” (as in “to stiffen”). In this particular glove, the U-shaped “stay” sometimes situated in the crevice between the thumb and the index finger is not utilized. They are optional, as well as the “knuckle” stays and the “Flex-Cuff”. The “Flex-Cuff” is an adjustable metal spring-resistant device incased in one of the “Glove” models. It allows full motion by the wearer and is a most excellent tool for building specific wrist area strength.

(0011) FIGURE 5 – Is a full top view of three (3) examples of different/varying “hinged-graduated-meshed” aluminum alloyed and ribbed chain-male-like supports of glove entirety. This is the glove offering that does not have (or does not need to have) any “stay-insertions” for finger-thumb-palm-wrist” resistance. The complete glove itself is made of one eighth to one sixteenth width/depth aluminum and/or PVC and/or combination alloy material. This material is graduated, hinged, and formulated in a manner that causes/results in the entire glove being

movement resistant to both the opening and closing of the hand. It is simply another option choice availability of the **Grip Strength Enhancement Glove AKA Hercules' Hand**.

DETAILED DESCRIPTION OF THE INVENTION

(0012) A fully comprehensive narrative of the created, developed, and manifested innovational instrumentation relates and pertains generally and specifically to and for a device which fits over the human hand(s) as a glove, the **Grip Strength Enhancing Glove AKA "Hercules' Hand"**. "**Hercules' Hand**" fits over the hand(s) as a glove because it is a glove, matter of fact, i.e., five digit encasings (four fingers and a thumb) inclusive of a complete covering of the hand down and at a minimum, past the wrist bone (Scaphoid). Unlike others (prior), the present invention relates generally to exercising devices and, more specifically, to a hand exerciser that is *not* worn directly on top of a hand or *not* worn *over* a glove of a user. In this presenting situation; the exerciser *is* the glove and the glove is, of course, worn directly on the hand(s). The hand slips into the glove as per normal for gloves. This innovation allows the fullest range of motion corresponding completely with whatever the original range of motion of the hand(s) is/was. This presenting glove apparatus manifestation continues allowing the user to flex either the entire hand or any individual digit in a natural movement through a full range of motion. Thereby, exercising the hand and digits in a highly effective manner and providing faster and greater results than any other products heretofore available. The instrumentation will present considerable physical therapy benefits for treating conditions such as arthritis, carpal tunnel syndrome, and weak muscles and joints and post surgical difficulties. Additional areas for probable high usage would be/are virtually limitless pertaining specifically to all sports (football, basketball, golf, soccer, tennis, track & field, baseball, volleyball, et. al.). Capacities for therapeutic inclination within the medical, industrial, and athletic worlds are virtually without boundaries

(0013) The "**Hercules' Hand**" (**HH**) can/will come in any number of different sizes in order to fit generally every size of hand within what would be considered a normal range of sizes and/or it will also come in the "one-size-fits-all" that most glove types come in these days. The materials of which the gloves are made can/will range from a thick, corrugated and/or

corrugated-like, thermal wool, to a lighter cloth fabric, to an acrylic polyester, to leather, with polyester filer of a varying percentage. The multi-fabric material in unto itself can/will have a corrugated-stiffness, pliable-range resulting in the gloves being more difficult to manipulate than standard (in multiple models) gloves. In addition, and most pertinent and important, on the top and on the underside of each digit extension of the gloves there will be a slender elongated pocket approximately slightly shorter than the length of each digit (finger) and the thumb. These "pockets/sheaths" are utilized for the purpose of incasing flexible, spring-tensioned, metal slip and/or stay (as in 'to stiffen') devices within each sheath. The size of the thin metal flexible "stay" devices are approximately one quarter inch in width (across). They vary from one inch to three and one half inches in length (different lengths of average human fingers/thumb), and one eighth to one sixteenth of an inch in thickness (about the same as 1 to 3 business cards). In addition, slipped within the thickness of the fabric at the palm area of the glove; there will be another flexible, thin metal, square-like shaped "stay" insertion. Being approximately between 3-4 inches squared. It will cover a space bordering from the base of the fingers, left/right to approximately a quarter inch from the inside/side of each inside part of the hand, down to approximately one half inch below where the inside thumb base meets the hand. In addition, in some (**HH**) models, there will be individual "knuckle stays" sheathed within the material on the topside, knuckle area of (**HH**). Also, in some models, there will be available what is called the "**Flex-Cuff**". This is a thin circular metal hoop spring-device that fits into an elongated "wrist-part" sheath of this type "Glove". The "Flex-Cuff" is adjustable over the full wrist area. It allows varying resistance in all directions and it allows a full range of motion and is an excellent tool for the many therapeutic and athletic reasons for strengthening the wrist.

(0014) A purpose of the present invention, "**Hercules' Hands**" is to provide a hand exerciser that will augment the strength, coordination and gripping ability for the hand and digits and wrist of the user as well as providing physical therapy for conditions such as arthritis, carpal tunnel syndrome, and weak muscles and joints. A still added intent and/or purpose of the current innovation is to offer a hand exerciser that will not inhibit the normal motion of the hands of the user. An additional method of doing this is another formulation of **HH**. That is to have as an endemic part of the glove varying "hinged-gradient -meshed" aluminum alloyed and ribbed

chain-male-like supports of glove entirety. This is the glove offering that does not have (or does not need to have) any “stay-insertions” for finger-thumb-palm-wrist” resistance. The complete glove itself is made of one eighth to one sixteenth width/depth aluminum and/or PVC and/or combination alloy material. This material is gradient, hinged, and formulated in a manner that causes/results in the entire glove being movement resistant to both the opening and closing of the hand. It is simply another option choice availability of the **Grip Strength Enhancement Glove AKA Hercules’ Hand**.

(0015) Another object of the current advancement is to provide a hand exerciser that conforms to the shape of the user’s hand becoming an unaffected addition to the body for appropriate hand movement and/or mobility. A still further mission of the present invention is to provide a hand exerciser that will not inhibit the normal motion of the hands of the user. A glove, of course, will not do that; any apparatus set *upon* a glove *will* cause some inhibition. Any apparatus set upon the hand itself, without a glove, *will* cause some inhibition. Only “**Hercules’ Hands**” (HH) actually will *not* cause inhibition. An even further design of the present invention is to provide a hand exerciser that may be worn while performing most other desired activities such as walking or playing sports or working at one’s job. Only an innovation that *is* the glove itself, such as and *only* “**Hercules’ Hands**” will actually result in *no* inhibition.

Claims

What I claim as my invention is:

1. An apparatus for exercising a hand of a user allowing a full range of motion of the hand during use, said apparatus being in full and completeness, a glove, *the glove*; a system-of-parts/mechanisms for grip and wrist strength enhancement, comprising:
 - a) An integration of corrugated and/or corrugated-like materials (as in acrylic orlon, dacron polyester, 40% to 100%) which in unto themselves cause and result in the glove(s) being considerably more difficult to manipulate and/or open/close than would be the case with “normal gloves worn for “normal” purposes, i.e., (aesthetics, warmth, protection, sports, etc.).